RESOURCE MANAGEMENT PLAN

FOR

LAND BASED ACTIVITIES

IN THE

LAKES FOREST DISTRICT

2000 - 2004

revised Sept. 1999

Ministry of Forests

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1.0 INTRODUCTION

The following Resource Management Plan (RMP) for the Lakes Forest District was written in consultation with industry to outline the best possible investments that need to be undertaken within the TSA to ensure a long term, high quality fiber supply, continued employment, and community stability. This was done by analyzing several sources of information (ie TSR, LRMP, Draft Incremental Silviculture Strategy, Access Management Plan) and identifying problems or potential problems within the Lakes TSA such as age class gaps and forest health issues.

Strategies were then devised to offset or eliminate these problems. The result is an outline of what type of work we should be delivering, along with an understanding of what is critical to complete and what is not. In order to complete this RMP some assumptions were made. They are:

1) All work that is presently funded by FRBC will continue to be funded.

2) Funding levels in future will be relatively equal to present.

3) Priorities may change over time and this document will be modified .

4) Spending FRBC dollars in the most effective manner in terms of timber supply, forest health etc., takes precedence over creating jobs.

1.1 Purpose

This RMP for the Lakes Forest District is written to satisfy the requirement of the ministries contract with FRBC.

The sole purpose of this document is to provide FRBC, ministries and other stakeholders guidance as to which activities are sound resource investments that will result in a benefit to the TSA and its people, regardless of funding sources or who is actually completing the work.

To spend FRBC funds wisely is especially important now, considering shrinking budgets. The idea, simply stated is to get the best "bang for the buck".

1.2 Plan Development Process

The RMP for the Lakes Forest District was written in consultation with licensees in the TSA. A meeting was held on July 27th and input was sought at that time. The RMP will be available for review and comment by other interested parties at any time.

1.3 Overview of Timber Supply and other issues

The most recent Timber Supply Review (TSR) was completed in 1994. This review found that for the most part, the Lakes TSA has a "robust" timber supply. The current AAC of 1.5 million m^3 can be maintained for 7 decades before a decline is necessary. Many factors may impact the AAC (both positively and negatively) however, some of the more negative findings can be offset by spending FRBC dollars wisely now.

Two examples of potential problems identified in the latest TSR and outlined in the draft Lakes TSA - Incremental Silivculture Strategy (see Appendix A) are:

1) Age class gaps in the 30-50 and 90-100 year age ranges, and

2) Removal of +/- 100,000 ha of Problem Forest Types and Low Sites from the Timber Harvesting Land Base.

If there are any major changes in the Lakes TSA Timber Supply situation, this plan will be modified accordingly.
Strategies to address issues such as these will be outlined later.

2.0 SUSTAINABLE HARVEST OBJECTIVE

The FRBC Sustainable Harvest program is comprised of five elements:

1) Backlog Activities
2) Stand Tending Activities
3) Forest Health Maintenance Activities
4) Forest Health Enhancement Activities
5) Current Fire and Pest Activities

All five elements of the Sustainable Harvest Program are presently active and were active long before FRBC was established. Recently, however, several things have happened which have made it necessary to change tactics. For example, the Mountain Pine Beetle (MPB) epidemic, particularly in the southeast portion of the TSA have made this forest health issue the highest priority for FRBC funding. Failure to act in an expedient manner to curb this epidemic would result in a severe risk to timber supply and fiber flow within the TSA.

Another example of a forest health issue that is having a major impact on activities within the District are Lodgepole Pine stem rusts (commandra, western gall rust, stalactiform). In the past, we have routinely juvenile spaced +/- 2,000 ha's of immature stands within the TSA each year. Presently, because of the rust concerns, we are contemplating juvenile spacing <250 ha/year in the TSA. This obviously has an impact on employment and job targets, but there is no gain in practicing forestry that is not giving a favorable return. This is particularly true when there are other activities that can be undertaken which will benefit the timber supply in the TSA. Examples include:

1) Addressing backlog NSR
2) Addressing utilization or rehab +/-100,000 ha of problem forest types and low types
3) Fertilization of appropriate stands

4) Commercial thinning. 106-03378/

Generally speaking then, within FRBC's Sustainable Harvest Program the Lakes Districts priorities are as follows:

1) Forest Health Maintenance Activities
2) Forest Health Enhancement Activities
3) Backlog Activities
4) Current Fire and Pest Activities
5) Stand Tending Activities

The Key Target of FRBC investments under the Sustainable Harvest Objective is to increase the timber available for potential future harvest by 25 million cubic meters over the next 5 years. This will make a significant contribution to the economy of British Columbia and will increase future options for sustainable forest management. Each activity goal; therefore, all objectives, strategies and opportunities within each activity should be directed towards achieving the applicable goal. The goals are as follows.

A. Forest Health Maintenance/Enhancement Activities

- "to maintain or improve the health, vigor and vitality of the forested land base while reducing resource losses by the various damaging agents".

B. Backlog Activities

- "To ensure prompt and effective reforestation and stand tending on backlog sites until free growing stands are achieved"

C. Current Fire and Pest Activities

- "To ensure all current fire and pest areas (where no salvage harvesting has occurred) are regenerated and tended to achieve free growing stands in a timely manner."

D. Stand Tending Activities

- "To manage incremental silviculture activities for their maximum resource benefits including, AAC, value and fiber flow for both their short and long term implications."

2.1 OBJECTIVES – Sustainable Harvest RMP for Lakes Forest District

A. Maintain or improve the health, vigor and vitality of the forested land base while reducing resource losses by the various damaging agents, including Mountain Pine Beetle and Hard Pine Rusts.

B. Ensure prompt and effective reforestation and stand tending on backlog sites until free growing stands are achieved. This includes completing scheduled surveys to monitor stand progress.

C. Increase productive areas by rehabilitation and/or utilization of Problem Forest Types.

D. Mitigate age - class gaps in 30-50 and 90-100 year age ranges. Add value where feasible.

2.11 Strategy to meet Objective A

- Complete overview flights of Pl stands within the TSA yearly. Fixed and Rotary wing aircraft.
- Carry out Mountain Pine Beetle line transects in high hazard types to find green attack.
- Complete ground surveys and/or include affected areas in harvesting plans, fall and burn, bait if necessary.
- Research emergency measures to counteract problem i.e. Park Burn
- In terms of Pine stem rusts reduce amount of juvenile spacing, gather inventory information (OIP) and research other possibilities i.e. rust resistant stock.

2.12 Strategy to meet Objective B

- Eliminate all backlog NSR by 2002
- Ensure all sites have prescriptions developed in 2000/2001
- Required site preparation in year 2001
- Plant all areas by 2002 with superior stock
- Practice aggressive brushing program as required to achieve free growing by 2012
- Carry out appropriate surveys (to monitor stand progress)
- Identify Problem Forest Types within District
- Utilize present timber if possible and rehabilitate sites
- Site Prep if necessary
- Plant with improved stock to target densities
- Monitor progress of new stands, brush and/or space as required

2.13 Strategy to meet Objective C

- Survey all juvenile stands declared Free Growing in High Hazard areas to determine incidence of Hard Pine Stem Rusts
- Determine suitability/applicability of reforesting site with alternate species
- Site Prep where feasible
- Plant with improved or superior stock to target densities
- Monitor progress of new stands, brush and/or space as required

2.14 Strategy to meet Objective D

- Juvenile space suitable stands to varying treatment regimes to encourage diversified portfolio of products
- Fertilize stands +/- 15 years from harvest to increase volume
- Practice aggressive brushing program (manual or chemical)
- Maintain minimal regeneration delay and plant best stock available to offset green up/ adjacency concerns
- Confirm paired plot analysis to formally increase yields from managed stands
- Prune 50 ha/yr of immature Pl stands on sites >site index 20 with no appreciable forest health concerns, good access, etc.

3.0 Forest Recreation Program

Terms of Reference

These plans are neither time or budget bound, but are intended to guide implementation of activities funded by Forest renewal's Land Based Program so as to ensure optimum attainment of the following goals.

Regional Goals:
Forest Recreation Program;
To manage forest recreation activities consistent with user demands, safety considerations and protection while reducing conflicts with other resources.

Recreation Sites and Trails;
To protect and maintain existing Crown investments in forest recreation infrastructure and provide for safe public use of Forest Service Recreation Sites and Trails.

Strategic objective
To manage , protect and conserve the forest recreation and visual resources for the use and enjoyment of the public. To provide safe, sanitary recreation use opportunities and protect significant recreation features and reduce conflicts with other resources.

District Goals:

- Use Management: To provide direction on site and trail maintenance, vegetation management, signage management, site and trail improvement and development, dispersed use and enforcement.
- Resource Management: To provide guidance to the effective management of the recreation resource.
- Landscape: To provide direction for the management of the visual landscape in the lakes Forest District.

Strategies to meet Goals:

Goal 1)

Use Management: To provide direction on site and trail maintenance, vegetation management, signage management, site and trail improvement and development, dispersed use and enforcement.

- To maintain the existing recreation sites and trails in a manner consistent with provincial standards. " to provide safe, sanitary, socially acceptable and environmental sound site and trails in areas of concentrated use".
  Maintenance to be carried out based on annual inspections and a regular maintenance program. See table 1.
- To manage site and trail , design, development, access and maintenance consistent with provincial standards for the appropriate Recreation Opportunity Spectrum (ROS). Upgrade and Rehab table 1.
- To review and determine the development potential and options on proposed sites and trails that have been identified by the public, industry and Forest service.
- To review and identify sites and trails suitable for development, to meet the needs of dispersed use. Based on information from the recreation analysis. See table 2 for recreation development project work proposed for next 5 years.
- To manage and implement a vegetation management plan for the district recreation sites to ensure public safety. See table 1.
- To manage an orderly signage plan for the upgrade and maintenance of signage for recreation within the district. To ensure higher visibility of sites and trails and improve direction and safer recreation traffic movement on Forest Service roads. See table 1.
- To provide guidance and guidelines for field staff in enforcing recreation portions of the FPC Act.

Goal 2
Resource Management: to provide guidance to the effective management of the recreation resource.

- Maintain a current data base of recreation inventories for the lakes Forest District. Recreation Features Inventory
  - Recreation Opportunity Spectrum
  - Trails inventory
  - UREPs

- Conduct a recreation resource analysis, which provide the foundation to planning and managing the recreation resource in the Lakes Forest District. This includes the analysis of recreation features and related opportunities, demands on and for the recreation resource, supplies of opportunities to utilize the resource, and identifies the obvious gaps in the supply. From the analysis, management strategies and priorities for visual quality, protection of recreation features, wilderness and cultural features, and development of recreation facilities can be formulated.

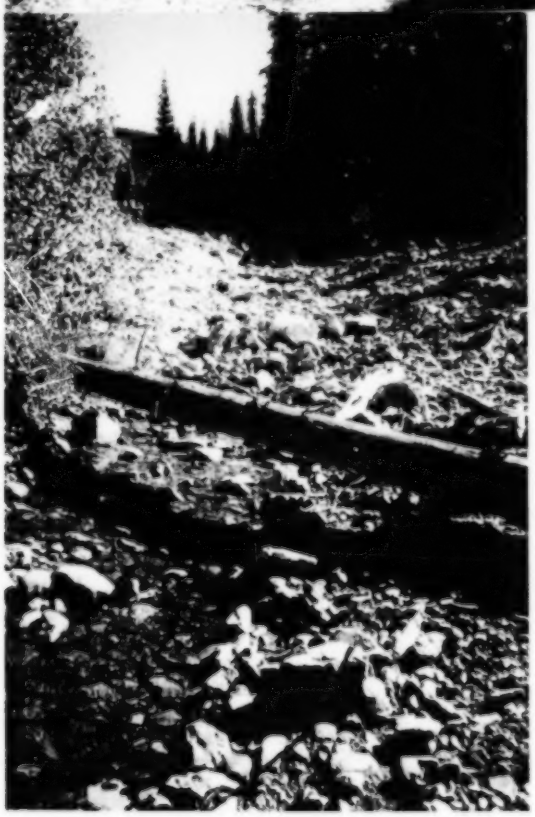
Goal 3)
Landscape: To provide direction for the management of the visual landscape in the Lakes Forest District.

- To carry out a re-inventory of visually sensitive areas to the new provincial standards. See table 3.
- Priories areas of visual sensitivity and determine a management objective and strategy for these areas.
- Provide guidance and procedures for, Forest Development Plans, referrals from other agencies, challenging default visual quality class and objectives, and application of visual impact assessments.

The following table illustrates proposed work to be undertaken in the Lakes TSA over the next five years.

ACTIVITY	UNITS	$COST/UNIT	TOTALS	IMPORTANCE
Maintenance	68	1,000	68,000	critical
New sites	2	90,000	180,000	high
New sites	12	40,000	480,000	mod
Visual Lakes Inventory	900	500	450,000	critical
Totals :			$1,178,000	

4.0 Watershed Restoration Program



Terms of Reference :

These plans are neither time or budget bound, but are intended to guide implementation of activities funded by Forest Renewal's Land Based Program so as to ensure optimum attainment of the following goals;

4.1 Program Strategic Objectives :

1. To restore, protect, and maintain fisheries, aquatic, and forest resources adversely affected by pre-code forest harvesting practices.
2. To reduce the risk of future potential impacts caused by past forest harvesting practices.
3. To initiate a District Access Management Plan that will maintain or enhance the timber supply and fiber flow within the area under the plan, in a manner consistent with any higher level plans, operational plans, or District Manager policy.
4. To acquire and disseminate Road and Culvert inventory information necessary to support operational plans and new standards established by the FPC.
5. To monitor, evaluate, and implement changes necessary to meet above objectives.
6. To Enhance Environment Values - *Forest Renewal BC will invest in restoring forest watersheds and in promoting environmental stewardship and strong environmental values.*
   a) Key watersheds targeted (highest priority) will be those with high fisheries values or those that provide community water supplies and which have a high likelihood of restoration success.
   - *Over the next five years, Forest Renewal BC will work with its partners to complete the restoration of 20 per cent of the highest priority watersheds that have been damaged or seriously threatened by past forest development activities.*

4.2 Program Goals;

To accelerate the recovery of watersheds, to mitigate existing forest resource impacts and to reduce the risk of future potential impacts that may have been caused by past forest practices. In doing so, achieve additional watershed benefits ; including enhancing environmental values and providing options for longer term forest resource and management decisions.

Goal #1- To restore, protect, and maintain fisheries, aquatic, and forest resources adversely affected by pre-code forest harvesting practices.

a) Assess all watersheds units to determine impacted areas, prescribe treatments, estimate costs, and set priorities.

b) Prioritize Watershed units (or sites) District wide, to address highest priorities based on the following general criteria ;

i) Public safety,
ii) High environmental hazards; landslides, slope stability, erosion (Remedial works, priorities based on ' best bang for the buck'),
iii) High resource values, water quality, fish and fish habitat, timber, range, recreation,
iv) Other values; communities, community watersheds, developments, private property, highways, railways, hydro, PNG, etc.

Goal #2 -To reduce the risk of future potential impacts caused by past forest harvesting practices.

a)Assess risk factors through Terrain Stability Assessments and prescribe treatments on high and Medium sites.

Goal #3 To initiate and maintain a District Access Management Plan that will enhance the timber supply, fiber flow, recreational, range, mining, agriculture, and other Forest based opportunities, within the area under the plan, in a manner consistent with any higher level plans, operational plans, or District Manager policy.

a) Consolidate all Forest Licensee Development Plans;
b) Determine main, branch and spur access routes that serve the greatest number of resource users;
c) Solicit public input;
d) Ensure that a process is established to review needs, update maps regularly, and make data readily available for users.

Goal #4 To acquire and disseminate Road and Culvert inventory information necessary to support operational plans and new standards established by the FPC..

a) Systematically record all main and branch roads needed for long term access (>5years) ;

- culverts, bridges, surfacing, road condition, r/w conditions, road class, hazards (w/ risk), problems, prescriptions

b) Record and catalog data such that it may be easily updated and reviewed annually;

Goal #5 To monitor, evaluate, and implement changes necessary to meet above objectives, and to address standards of construction.

a) Monitoring; Monitoring is necessary to ensure that our objectives are being met in the longer term. Sites need to be checked to ensure prescriptions are properly completed. It is also necessary to keep a record of historic program changes. History of program to date;

b)Evaluation; Representative test stations will be set up to evaluate works done in higher risk areas, to determine effectiveness. Each Licensee project area should be assessed, it is intended that the most extreme sites be monitored .

c) Implementation; Results of evaluations and recommendations forwarded to stakeholders.

4.3 Strategy for Watershed Prioritization :

In keeping with new directions from FRBC (goals and objectives), Lakes District Watersheds and Landscape Units (1987) are being reassessed to focus first on resource values, water quality for people and fish, and fish habitat. The intent being to focus on completing the highest priorities first.

Our plan differs somewhat from the Coastal model provided by FRBC. Interior priorities tend to spread out over many watershed units, not necessarily confined to high use Watersheds or Landscape Units. We believe this won't compromise FRBC's goals and objectives of completing 20% of Watersheds within the next 5 year period, (in fact we probably have already achieved this) and should be able to write off most watersheds as having at least 90% of high priority sites treated. In addition to those values above, we have considered other resource values such as Range, Recreation, soil stability and salvage opportunities.

The Lakes District fits nicely into most of the new management strategy;

1) in that most watersheds are not heavily impacted,
2) the significance of several watersheds is high due to;
   - high Rural populations, and their need for high quality water sources,
   - channels in the upper Bulkley River provide critical over wintering habitat to Coho which are listed as an endangered species, Bull Trout is a 'blue listed' species that has been identified in several areas of the District. Fish habitat surveys are ongoing throughout the District to ensure fisheries values are recognized.
   - Upland watersheds with fine textured soils, provide the initial water quality for downstream community watershed users. Those watersheds that feed directly into rivers without 'settling lakes' have their rankings boosted upward.
3) the probability of success has been very good, priorities are fairly straight and easily identified,
4) the cost of remedial works are relatively low compared to coastal works,
5) the integrated approach, with other initiatives such as Fisheries Renewal, MOTH, and private property owners has been initiated,
6) 75% of the District have level 1 and 2 assessments completed, a good portion of the high priority sites have prescriptions, work scheduled, or completed.

Exceptions to the new direction ;

1) Most of our current WRP projects are level 3 works, (bridge replacements or stream related sites) for this reason we prefer to rank individual sites rather than whole Watersheds or Landscapes. However, to help in this 3rd review of watershed priorities, several factors have been used in a point ranking of the 72 watersheds and 14 landscape units, please refer to the attached spreadsheet, table 4(a).
2) Fish Habitat assessments are continuing over new areas in order to meet previous commitments to cover the remainder of the Lakes District. (ie: 1 contract @ East Ootsa) This should be completed in the transition period.

4.4 Watershed Prioritization ;

The attached spread sheet Table 4(b) lists the 72 watershed units, features of the units, their overall ranking (H-M-L). This is an initial ranking subject to change as assessments proceed. Baseline prioritization was carried out in July 1998, by District personnel, revisions made in 09/99 have MELP input (Lough) and Licensee submissions on the basis of the following ;

A) Past Development Impacts
- amount of past harvesting within the area
- relative density of harvesting and roads
- harvesting method,
- amount of other impacts to the area (e.g. mining or agriculture)
- potential for timber salvage (bugwood,blowdown)

B) Physical Characteristics
- soil sensitivity and topography (erosion potential)
- slope stability (soil type and slope)
- runoff and precipitation characteristics
- slope stream linkages (connectivity)

C) Natural Resource values
- recreation, range (visual, use and access)
- water quality – domestic (by District MOF)
- fish and fish habitat (by MELP and Licensees)
- regionally significant species (by MELP)

D) Probability of Further Impacts
- further impacts are likely if left untreated (high priority)
- damage has already occurred, and there is likely no effect if implementation is delayed (low)

E) Probability of Success
- highly unstable & future repair of restoration works are likely (low priority).
- continued impacts from other sources likely in the area, e.g. mining, agriculture, natural (low)
- stable site conditions and relatively stable weather conditions relating to the probability that improvements will not be lost (high).

Activity (site) Prioritzation ;

The following criteria, principals, options, and rational address both the stewardship role and the strategic objectives of the program.

Non-isolation of future works;

Future works require consideration of cost effectiveness and/or long term risk management where deactivation or other activities causes loss of access to lower priority works, or other FRP activities. To evaluate risk, and cost necessity as it relates to standards under the Forest Practices Code. (ie; 300mm culverts may not be replaced unless significant risk is recognized)

Protect Past Investments;

Requires consideration of cost effectiveness for the program where:
- activities have been partially complete (eg. Assessment or prescriptions complete which will be lost if not implemented);
- activities that require subsequent treatments (eg. Bio-engineering where successive treatments are required to achieve stability); and
- monitoring of sites following treatment.

Preventative Works
- Requires consideration of cost effectiveness (it is often in the magnitude of 2 to 4 times more expensive to restore a site after failure, than to prevent failure by mitigative works). Incorporate into Licensee maintenance responsibilities for road users.

- On non-status roads, treat sites that showing signs of instability or excessive erosion. Incorporate into Ministry maintenance program.

Opportunities ;

1)Assessments, prescriptions, deactivation, monitoring ;

- Assessments and prescriptions - 75% of the District has be
- en covered. A rough indication is 10-15% high risk areas, 50 % medium, and 35-40% low risk.
- Deactivation is a very contentious issue with all District resource users. Generally , deactivation in our District (with relatively low environmental hazards) has caused more problems than it has solved. In lower risk watersheds, deactivation has a low priority, preference is expressed towards maintaining access but reducing risk and long term costs.
    - access throughout the District is necessary for silviculture, salvage operations, forest health, recreation, range and private use. The concept of permanent deactivation of branch roads or denying access has become unacceptable to most users.
    - When deactivation does occur, we found that exposing unstable subgrades needs a lot of extra armouring, re-activation and loss of salvage revenues is a prime concern. These added costs would be better spent stabilizing the original roadbed (this also reduces maintainance costs).
- Monitoring of deactivated roads and previous works are ongoing. This helps determine effectiveness and program direction.

2) Road , cut block , and hill slope stabilization ;

- Surface erosion is a primary concern in fine textured soils. The interaction zone with streams has received considerable works to date, this needs to continue. Upstream works were the initial priority, rankings now vary with other factors.
- Landslides are few, but usually are stream related and receive highest priority for treatment.
- Seeding has been effective at reducing surface erosion, weed control, wildlife, and aesthetics enhancement. Generally seeding of recent disturbances achieves approx. a 75-90% take, seeding of older sites achieves approx. 50% establishment, this is better than expected and has a noticeable improvement to most sites. The erosion control mix is good. Approx. 50% of the District has been treated to date, we plan to continue.

3) Monitoring has resulted in recommendations forwarded to engineering section to improve design and construction standards. (eg. armouring is now an essential part of drainage structures and ditch stabilization). Establish and revise technical standards (eg. In fine textured soils, on grades < 10%, berms should not be placed on the road surface below cross-ditches).

4) Access Management Plans are a necessary tool for Government, Industry and the Public. Forest Development Plans don't cover the whole District and therefore an overall plan is necessary. Consolidated 5 - Year Development Plan mapping is a good working tool for planners. Agreements are needed between all Licensees for annual updates, cost sharing and timing. These maps should be available for public use (viewing or purchase).

5)Road Inventories are being conducted as part of the WRP assessment process, it provides;

- a systematic coverage of all roads and will provide the tool necessary for good management (level of risk and probabilities in the event of major flooding),
- the % of land base occupied or available for rehab.
- Assessments and prescriptions are done together through inventories,

6) Stream classifications and Inventories are one of our greatest needs. Licensees and project managers are pursuing these as needed. MELP has a mapping project ongoing that will eventually cover the District. Some works are delayed for lack of this data. Emphasis should be put into these inventories to facilitate high priority works.

- The interaction zone with forest roads and streams, is a MOF responsibility, a close working relationship is established between MOF and MELP, however the capacity to deliver is an issue with MELP.

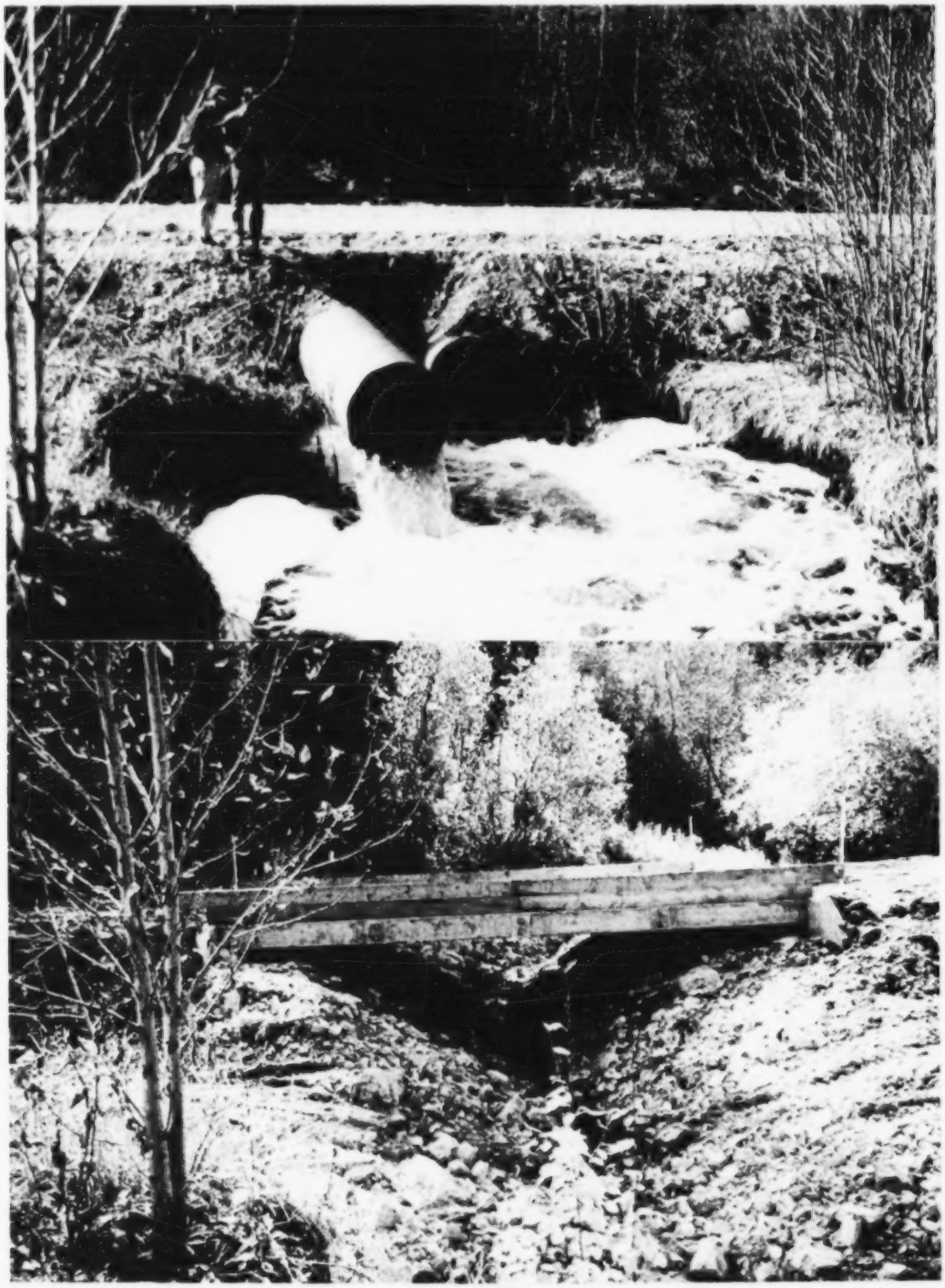
7)Road and Landing Rehabilitation is questionable, the potential gains to AAC ,and increased productive land base are substantial in the long term. Several landings and spurs have planted and/or seeded over the years, these should be properly researched. The District and Babine Forest Products have initiated a cost benefit analysis. This initiative is covered under 'Silviculture', but may be implemented by WRP.
8) Ministry of Transportation and Highways , Canadian National Railways, B.C. Hydro , and Pacific Northern Gas have fish passage, stabilization , and siltation issues that need to be addressed.
9) Cheslatta River and Lake stabilization is a huge project, but a long term plan should be developed.
10) Ootsa Reservoir clean up and stabilization is an ongoing project
11)Private property issues should be dealt with on an individual basis, there are provisions to enter into agreements whereby the landowner(s) need to agree not to 'undo' works paid for with public funds.

List of WRP opportunities

The following table illustrates proposed work to be undertaken in the Lakes TSA over the next five years.

ACTIVITY	UNITS	$COST/UNIT	TOTALS	IMPORTANCE
Assessments	8	7500	$60,000	critical
Prescriptions	10	2000	20,000	critical
Monitoring	3	2000	6000	critical
Stabilization	10	40,000	400,000	critical
Access Management Plan	All 72	150	10,000	high
Inventories / classifications	6	5,000	30,000	critical
Works on above assessments	40	40,000	1,600,000	high
Rehab	2	12,500	25000	high
Totals:			$2,151,000.	

5.0 Bridge Replacement Program :



Program Strategic Objectives

- To ensure that all bridges on Forest Service Roads;
  - meet current safety / load standards,
  - not restrict fish passage,
  - enhance water quality (where pollution exists)
  - minimize environmental impacts,
  - be consistent with fiber flow requirements,
- To inventory and prioritize replacements based on highest fisheries value, greatest potential impact to the environment, or water quality.

Opportunities;

1) Recover and protect Fish habitat;
   - replace culverts and drainage structures that isolate fish habitat,
   - various types of structures are being tried and monitored by MOF and MELP for effectiveness and cost efficiency.
   - Wooden structures are being replaced with permanent and semi-permanent concrete – steel structures.

List of Bridge Replacement Opportunities:

The following table illustrates proposed work to be undertaken in the Lakes TSA over the next five years.

Summary of opportunities;

Activity	Units	$ cost/unit	Total	Importance
Bridge replacements	22	50,000	$1,100,000	critical
Totals:			**$1,100,000**	

6.0 Road and Bridge Maintenance Program ;

Regional Program Goals;
To ensure Forest Service Roads and Bridges are maintained in a manner consistent with the Forest Practices Code Act of BC.

Program Strategic Objectives ;
To ensure that all roads and bridges are maintained to a safe level,
To ensure minimal impacts to resource values, (fish habitat, water, soils, productivity,)
To treat those sites that don't qualify under Licensee obligations that affect access to enhanced forestry projects or other forest resource projects.

Opportunities ;
1) Assessments and prescriptions undertaken by WRP have indicated a lack of surfacing materials (on older roads), more maintenance and increased number of drainage structures are needed. In general, higher class roads are needed in some areas to reduce environmental impacts, reduce long term costs, and better serve the goals previously outlined .
2) Main haul roads should be considered for improved surfacing (calcium) for safety, and reduced maintenance costs.
3) Preventative Works ;

Requires consideration of cost effectiveness (it is often in the magnitude of 2 to 4 times more expensive to restore a site after failure, than to prevent failure by mitigative works). Incorporate into Licensee maintenance responsibilities for road users.

4) Works on all roads not covered by Licensee responsibilities, maintain or deactivate roads that present significant risk. Criteria to be considered are;

- safety issue involving current or possible road users;
- potential impacts to a stream; containing commercial, sport fishing, or community water supply; or other resource values ;
- potential impacts from other infrastructure (roads or bridges);
- visual impact along major transportation corridors or high recreational use areas; and
- impacts to existing plantations or forest land.

5) Work on Forest Renewal Program activities.

List of Critical Projects ;

- Overall, the District has had relatively few critical incidents of washouts, landslides, or other major risks. Assessments are ongoing, opportunities may be added as projects advance.

List of work opportunities ;

The following table illustrates proposed work to be undertaken in the Lakes TSA over the next five years.

ACTIVITY	UNITS	$COST/UNIT	TOTALS	IMPORTANCE
Safety/fish/stability	25	4,000	$100,000	critical
Deactivation	3	1500	4,500	high
maintainance	25	5,000	125,000	high
Totals;			$229,000.	